to a Special Notice for Repair unless the movement is made in accordance with the restrictions contained in the Special Notice.

(g) Paragraphs (a), (b), and (c) of this section shall not apply to sanitation conditions covered by §§ 229.137 and 229.139. Sections 229.137 and 229.139 set forth specific requirements for the movement and repair of locomotives with defective sanitation compartments.

[45 FR 21109, Mar. 31, 1980, as amended at 61 FR 8887, Mar. 6, 1996; 67 FR 16050, Apr. 4, 2002; 72 FR 59223, Oct. 19, 2007]

§ 229.11 Locomotive identification.

(a) The letter ''F'' shall be legibly shown on each side of every locomotive near the end which for identification purposes will be known as the front end.

(b) The locomotive number shall be displayed in clearly legible numbers on each side of each locomotive.

§ 229.13 Control of locomotives.

Except when a locomotive is moved in accordance with § 229.9, whenever two or more locomotives are coupled in remote or multiple control, the propulsion system, the sanders, and the power brake system of each locomotive shall respond to control from the cab of the controlling locomotive. If a dynamic brake or regenerative brake system is in use, that portion of the system in use shall respond to control from the cab of the controlling locomotive.

§ 229.14 Non-MU control cab locomotives.

On each non-MU control cab locomotive, only those components added to the passenger car that enable it to serve as a lead locomotive, control the locomotive actually providing tractive power, and otherwise control the movement of the train, are subject to this part.

§ 229.15 Remote control locomotives.

(a) *Design and operation.* (1) Each locomotive equipped with a locomotive control unit (LCU) shall respond only to the operator control units (OCUs) assigned to that receiver.

(2) If one or more OCUs are assigned to a LCU, the LCU shall respond only to the OCU that is in primary command. If a subsequent OCU is assigned to a LCU, the previous assignment will be automatically cancelled.

(3) If more than one OCU is assigned to a LCU, the secondary OCUs' man down feature, bell, horn, and emergency brake application functions shall remain active. The remote control system shall be designed so that if the signal from the OCU to the RCL is interrupted for a set period not to exceed five seconds, the remote control system shall cause:

(i) A full service application of the locomotive and train brakes; and

(ii) The elimination of locomotive tractive effort.

(4) Each OCU shall be designed to control only one RCL at a time. OCU's having the capability to control more than one RCL shall have a means to lock in one RCL ''assignment address'' to prevent simultaneous control over more than one locomotive.

(5) If an OCU is equipped with an ''on'' and ''off'' switch, when the switch is moved from the ''on'' to the ''off'' position, the remote control system shall cause:

(i) A full service application of the locomotive train brakes; and

(ii) The elimination of locomotive tractive effort.

(6) Each RCL shall have a distinct and unambiguous audible or visual warning device that indicates to nearby personnel that the locomotive is under active remote control operation.

(7) When the main reservoir pressure drops below 90 psi while the RCL is moving, the RCL shall initiate a full service application of the locomotive and train brakes, and eliminate locomotive tractive effort.

(8) When the air valves and the electrical selector switch on the RCL are moved from manual to remote control mode or from remote control to manual mode, an emergency application of the locomotive and train brakes shall be initiated.

(9) Operating control handles located in the RCL cab shall be removed, pinned in place, protected electronically, or otherwise rendered inoperable as necessary to prevent movement

caused by the RCL's cab controls while the RCL is being operated by remote control.

(10) The RCL system (both the OCU and LCU), shall be designed to perform a self diagnostic test of the electronic components of the system. The system shall be designed to immediately effect a full service application of the locomotive and train brakes and the elimination of locomotive tractive effort in the event a failure is detected.

(11) Each RCL shall be tagged at the locomotive control stand throttle indicating the locomotive is being used in a remote control mode. The tag shall be removed when the locomotive is placed back in manual mode.

(12) Each OCU shall have the following controls and switches and shall be capable of performing the following functions:

(i) Directional control;

(ii) Throttle or speed control;

(iii) Locomotive independent air brake application and release;

(iv) Automatic train air brake application and release control;

(v) Audible warning device control (horn);

(vi) Audible bell control, if equipped;

(vii) Sand control (unless automatic);

(viii) Bi-directional headlight control;

(ix) Emergency air brake application switch;

(x) Generator field switch or equivalent to eliminate tractive effort to the locomotive;

(xi) Audio/visual indication of wheel slip, only if an audio/visual indication is not provided by the RCL;

(xii) Activate the audio indication of movement that is located on the RCL for a duration of at least 3 seconds; and

(xiii) [Reserved]

(xiv) Require at least two separate actions by the RCO to begin movement of the RCL.

(13) Each OCU shall be equipped with the following features:

(i) A harness with a breakaway safety feature;

(ii) An operator alertness device that requires manual resetting or its equivalent. The alertness device shall incorporate a timing sequence not to exceed 60 seconds. Failure to reset the switch within the timing sequence shall cause a service application of the locomotive and train brakes, and the elimination of locomotive tractive effort; and,

(iii) A tilt feature that, when tilted to a predetermined angle, shall cause:

(A) An emergency application of the locomotive and train brakes, and the elimination of locomotive tractive effort; and

(B) If the OCU is equipped with a tilt bypass system that permits the tilt protection feature to be temporarily disabled, this bypass feature shall deactivate within 60 seconds on the primary OCU and within 60 seconds for all secondary OCUs, unless reactivated by the RCO.

(14) Each OCU shall be equipped with one of the following control systems:

(i) An automatic speed control system with a maximum 15 mph speed limiter; or

(ii) A graduated throttle and brake. A graduated throttle and brake control system built after September 6, 2012, shall be equipped with a speed limiter to a maximum of 15 mph.

(15) RCL systems built after September 6, 2012, shall be equipped to automatically notify the railroad in the event the RCO becomes incapacitated or OCU tilt feature is activated.

(16) RCL systems built prior to September 6, 2012, not equipped with automatic notification of operator incapacitated feature may not be utilized in one-person operation.

(b) *Inspection, testing, and repair.* (1) Each time an OCU is linked to a RCL, and at the start of each shift, a railroad shall test:

(i) The air brakes and the OCU's safety features, including the tilt switch and alerter device; and

(ii) The man down/tilt feature automatic notification.

(2) An OCU shall not continue in use with any defective safety feature identified in paragraph (b)(1) of this section.

(3) A defective OCU shall be tracked under its own identification number assigned by the railroad. Records of repairs shall be maintained by the railroad and made available to FRA upon request.

(4) Each time an RCL is placed in service and at the first practical time after the start of each shift, but no

more than 2 hours after the start of that shift, locomotives that utilize a positive train stop system, such as remote control pullback protection, shall perform a conditioning run over a track that the positive train stop system is being utilized on to ensure that the system functions as intended.

[77 FR 21342, Apr. 9, 2012, as amended at 77 FR 75056, Dec. 19, 2012]

§ 229.19 Prior waivers.

Waivers from any requirement of this part, issued prior to June 8, 2012, shall terminate on the date specified in the letter granting the waiver. If no date is specified, then the waiver shall automatically terminate on June 8, 2017.

[77 FR 21343, Apr. 9, 2012]

§ 229.20 Electronic recordkeeping.

(a) For purposes of compliance with the recordkeeping requirements of this part, except for the daily inspection record maintained on the locomotive required by § 229.21, the cab copy of Form FRA F 6180–49–A required by § 229.23, the fragmented air brake maintenance record required by § 229.27, and records required under § 229.9, a railroad may create, maintain, and transfer any of the records required by this part through electronic transmission, storage, and retrieval provided that all of the requirements contained in this section are met.

(b) *Design requirements.* Any electronic record system used to create, maintain, or transfer a record required to be maintained by this part shall meet the following design requirements:

(1) The electronic record system shall be designed such that the integrity of each record is maintained through appropriate levels of security such as recognition of an electronic signature, or other means, which uniquely identify the initiating person as the author of that record. No two persons shall have the same electronic identity;

(2) The electronic system shall ensure that each record cannot be modified, or replaced, once the record is transmitted;

(3) Any amendment to a record shall be electronically stored apart from the record which it amends. Each amendment to a record shall uniquely identify the person making the amendment;

(4) The electronic system shall provide for the maintenance of inspection records as originally submitted without corruption or loss of data; and

(5) Policies and procedures shall be in place to prevent persons from altering electronic records, or otherwise interfering with the electronic system.

(c) *Operational requirements.* Any electronic record system used to create, maintain, or transfer a record required to be maintained by this part shall meet the following operating requirements:

(1) The electronic storage of any record required by this part shall be initiated by the person performing the activity to which the record pertains within 24 hours following the completion of the activity; and

(2) For each locomotive for which records of inspection or maintenance required by this part are maintained electronically, the electronic record system shall automatically notify the railroad each time the locomotive is due for an inspection, or maintenance that the electronic system is tracking. The automatic notification tracking requirement does not apply to daily inspections.

(d) *Accessibility and availability requirements.* Any electronic record system used to create, maintain, or transfer a record required to be maintained by this part shall meet the following access and availability requirements:

(1) Except as provided in § 229.313(c)(2), the carrier shall provide FRA with all electronic records maintained for compliance with this part for any specific locomotives at any mechanical department terminal upon request;

(2) Paper copies of electronic records and amendments to those records that may be necessary to document compliance with this part, shall be provided to FRA for inspection and copying upon request. Paper copies shall be provided to FRA no later than 15 days from the date the request is made; and,

(3) Inspection records required by this part shall be available to persons who performed the inspection and to